American Fern Journal 96(4):112–114 (2006)

Thelypteris sancta (L.) Ching, New for Florida and the Continental United States

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ABSTRACT.—While compiling a plant inventory for a 20 acre forest fragment in Florida City, Miami-Dade County, Florida, on March 30, 2006, an unusual *Thelypteris* species was collected. The specimens did not correspond to any species reported from Florida (Wunderlin and Hansen, 2000). Using keys in Proctor (1989), Sánchez *et al.* (2006), and Morton (1963) it was tentatively identified as *T. sancta* (L.) Ching. A specimen was sent to Alan R. Smith, an expert on the genus, who confirmed this identification.

Thelypteris sancta is a widespread species occurring from the Greater and Lesser Antilles through Central America and northern South America (Proctor, 1989; Sánchez *et al.*, 2006). It is the second member of *Thelypteris* subgenus *Amauropelta* to be found in Florida. The other member, *T. resinifera* (Desv.) Proctor, occurs in central Florida in De Soto, Hillsborough, Pasco, and Polk Counties. Subgenus *Amauropelta* contains about 200 species (Smith, 1974), and section *Amauropelta* about 50 (Smith, 1974). The subgenus is distinguished from other *Thelypteris* in the Florida and Caribbean area by having free veins reaching the margin above the sinus, simple hairs, and sessile reddish glands on the abaxial surface of the blades (Smith, 1974; Proctor, 1989). *Thelypteris sancta* (Fig. 1) has pinnate pinnatifid blades with one or two pairs of free pinnules at the base of each pinna, whereas *T. resinifera* does not have free pinnules. The overall aspect of *T. sancta* is quite different from other *Thelypteris* species in southern Florida. Because *T. resinifera* does not occur in southern Florida, the only other species in southern Florida with an erect stem and primarily pinnate pinnatifid fronds is *T. patens* (Sw.) Small *ex* R.P. St. John (subgenus *Cyclosorus*). *Thelypteris patens*, however, is a much larger species with veins converging at the sinus (Proctor, 1989; Wunderlin and Hansen, 2000).

About 200 individuals of *Thelypteris sancta* were observed on the edges of solution holes in oolitic limestone substrate. Many age classes were seen, from juvenile sporophytes to adults, and even many dead specimens. Some plants were under a dense canopy of the exotic tree *Schinus terebinthifolius* Raddi. Most of the population was in a rockland hammock with a canopy dominated by native hardwoods, especially *Quercus virginiana* Mill. and *Ficus aurea* Nutt. Associated ferns included *T. dentata* (Forssk.) E. P. St. John, *T. kunthii* (Desv.) C. V. Morton, and *Anemia adiantifolia* (L.) Sw. A review of 1940 aerial photographs of the site showed that there has been significant habitat succession in the last 66 years. The area found to contain *T. sancta* was formerly a pine rockland savanna with a canopy of *Pinus elliottii* Engelm. var.

FIG. 1. Habit view of *Thelypteris sancta*, inset showing arrangement of sori.

densa Little & K.W. Dorman. Some old *Pinus* stumps still remain on the site, but the area has succeeded to a closed-canopy rockland hammock forest dominated by hardwoods due to fire suppression. This succession was probably accelerated by seed rain from a rockland hammock about 125 m to the east of the fern population. Most of this historical hammock has been cleared; a small remnant fragment was surveyed and was found not to contain *Thelypteris sancta*. The forest floor in the historical hammock lacks extensive amounts of exposed oolitic limestone in contrast to the area where *T. sancta* was found.

Thelypteris species are not typically cultivated, except by fern enthusiasts, and an internet search for *T. sancta* found no evidence of cultivation anywhere. The closest native occurrence to the Florida population is about 350 km away in Cuba (Sánchez et al., 2006). The species has probably gone undiscovered in Florida due to its rarity. Unlike most natural areas in Miami-Dade County, the site where it was found has been poorly surveyed by biologists because much of the site is of poor quality and difficult to access. *Thelypteris sancta* is probably a naturally occurring member of the Florida flora derived from wind-blown spores from Cuba or elsewhere in the Greater Antilles. Whether the arrival was in recent years or prior to European settlement in Florida is unknown.

Voucher: **Florida**. Miami-Dade County: Florida City. Navy Wells #23 Preserve. Just east of SW 182 Ave. at theoretical SW 358 St. A couple of hundred individuals in rockland hammock and under a canopy of *Schinus terebinthifolius* on oolitic limestone. Easting 551780, Northing 2813288 (UTM17N, WGS84). 30 March 2006, *Bradley* 2644 (FTG, NY, UC, USF).

Acknowledgments

I thank Eric Fleites of The Institute for Regional Conservation, who was with me at the time of the discovery, noticing the plants at the same time I did, Christina Casado-Acorn and Emilie Young of the Miami-Dade County Environmentally Endangered Lands Program for funding the plant inventory of Navy Wells #23 Preserve, Alan R. Smith of the University of California for confirming the identification of the species and making recommendations on the manuscript, Kirsten Hines of The Institute for Regional Conservation for review of the manuscript, an anonymous reviewer, and James Hickey of Miami University for valuable suggestions on the manuscript.

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